without TDF add-on in the treatment of CHB. **METHODS:** Analysis population consisted of patients (n=1000; 35% HBeAg-positive; 35 years old) without compensated or decompensated cirrhosis(CC, DC) or hepatocellular cancer(HCC). AVs compared were 1) Ldt 600mg/day; 2) Ldt + add-on TDF 300mg/day when non-response or viral resistance occurs; and 3)LAM 100mg/day (4)LAM + add-on TDF 300mg/day. A decision tree model with 5 parallel pathways for different levels of HBV-DNA was built using a 10-year time-horizon. Selected major clinical outcomes were mortality and life-years-lost (LYL). **RESULTS:** With LAM or Ldt monotherapy, 137CC, 5DC, 40 HCC cases and 70 dead versus 85CC, 3,5DC and 25HCC cases and 44 dead were expected to occur, respectively. With LAM or Ldt monotherapy, 1236 and 774 life-years will be lost, respectively. When a potent AV is added to LAM or Ldt, HBV complications were expected to decrease and avoided LYL were substantial (164 to 591 years, respectively). However, there is no important difference between starting with LAM or Ldt and adding TDF strategies: 1CC, 0 DC, 0HCC cases and 2 dead will be avoided. **CONCLUSIONS:** Ldt monotherapy was found to be superior to LAM monotherapy. However, Ldt +TDF does not seem a better approach than LAM+TDF in the treatment of CHB. This paradoxical finding might be explained due to marginally superior efficacy of Ldt versus LAM and a longer time-period before adding a potent antiviral to treatment.

PIN9

SYSTEMATIC REVIEW OF NON-INTERFERON BASED REGIMENS FOR CHRONIC HEPATITIS C TREATMENT

Aggarwal S
Novel Health Strategies, Bethesda, MD, USA

OBJECTIVES: Chronic Hepatitis C virus (HCV) infection is one of the silent global epidemics with significant unmet need and disease burden. One of the major limitations of current treatments is the need for 12 or 6 months of Interferon based therapy, which has tolerability and toxicity issues for many patients. During last 2-3 years several new agents have been tested in clinic, which have shown promising results as non-interferon based therapy. Goal of this study was to review the clinical efficacy and safety profile of non-interferon based therapies for HCV treatment. **METHODS:** We searched the MEDLINE, and abstracts from AASLD and EASL until May 2011. Studies were selected for clinical trials on direct acting agents for HCV. Primary endpoints reviewed were Sustained Viral Response (SVR). Toxicity was evaluated as secondary endpoint. Aggregated data were further analyzed to understand comparative safety and efficacy. **RESULTS:** Until May 2011, results of five eligible HCV clinical trials for interferon free regimens were available. Overall, treatment with combination of protease and polymerase inhibitor showed dramatic viral load reduction after 2 weeks of treatment. The combination of PSI-7977 and PSI-938 showed 93% viral clearance after 14 days (n=16). The combination of RG7227 and RG7128 demonstrated 5.1 log reduction in viral load in treatment naive, and 4.9 log reduction in null responder patients after 14 days of treatment. The combination of BMS-790052 and BMS 650032 showed 36.3% 24 week SVR in null responder patients. One study evaluating VX-222 and Telaprevir combination was discontinued due to viral breakthrough. Several studies are currently on-going whose data would be available in 2011-2012. **CONCLUSIONS:** Non-interferon based therapies have shown impressive viral load reduction in short term studies. However, more data for SVR, viral breakthrough and resistance is needed to confirm their safe use in HCV infected population.

PIN10

CLINICAL AND ECONOMIC BURDEN OF HOSPITAL ONSET HEALTH CARE FACILITY ACQUIRED CLOSTRIDIUM DIFFICILE INFECTION (HO-HCFA-CDI) IN EUROPE: A SYSTEMATIC REVIEW

Wiegand P[1], Nathwani D[2], Wilcox M[3], Stephens JM[1], Wan W[1], Shelbaya A[4], Haider S[5]
[1]*Pharmerit International, Bethesda, MD, USA,* [2]*Ninewells Hospital & Medical School, Dundee, UK,* [3]*Leeds General Infirmary, Leeds, UK,* [4]*Pfizer, New York, NY, USA,* [5]*Pfizer Inc., Groton, CT, USA*

OBJECTIVES: To describe the clinical and economic burden associated with hospital onset health care facility acquired *Clostridium difficile* infection (HO-HCFA-CDI) in European health care facilities (EHCF). **METHODS:** A systematic review of the PubMed, EMBASE and infectious disease societies was performed to capture clinical and economic burden of HO-HCFA-CDI in Europe. Included studies were published in English between 2000-2010 and had >20 patients with documented CDI acquired/treated in a EHCF. Data collection was completed by three un-blinded reviewers using Cochrane Handbook and PRISMA guidelines. The primary outcomes were mortality, recurrence, length of stay (LOS) and cost related to CDI. **RESULTS:** We identified 1138 primary articles and conference abstracts, which were narrowed to 38 and 30 studies, respectively, after applying eligibility criteria. Outcomes data were available from only 14 countries, with 47% of studies from UK institutions. CDI mortality at 30 days ranged from 2% in France to 42% in the UK. Mortality rates more than doubled from 1999-2004, and continued to rise until 2007, when reductions were noted in the UK. Recurrent CDI varied from 1% in France to 36% in Ireland; however, equivalent recurrence definitions were not used, which affects study outcomes. Median length of stay ranged from 8 days in Belgium to 124 days in the UK. The incremental cost of CDI was £4,577 in Ireland and £11,317 in Germany, after standardization to 2010 GBP. Country-specific averages, weighted by study sample sizes, ranged from 2.8% to 29.8% for 30-day mortality; 5.9% to 22.6% for recurrence; and, 16.1 to 37.9 days for LOS. **CONCLUSIONS:** Burden of CDI in Europe was most commonly described using 30-day mortality, recurrence, LOS and cost data. Country-specific reporting mandates partly influence the available data on CDI burden in EHCFs. The continued spread of CDI and resultant healthcare burden underscores the need for judicious antibiotic use.

PIN11

THE IMPACT OF DIRECTLY OBSERVED THERAPY (DOT) IN PATIENTS WITH TUBERCULOSIS

Sallum RH[1], Travers KU[1], Kalsekar A[2], Kleinman L[3]
[1]*United BioSource Corporation, Lexington, MA, USA,* [2]*Bristol Myers Squibb, Princeton, NJ, USA,* [3]*United BioSource Corporation, Bethesda, MD, USA*

OBJECTIVES: With adherence being a driver of treatment efficacy, we aimed to systematically assess treatment adherence and efficacy in a disease area impacted by the rapid emergence of multiple drug resistances as a result of non-adherence, tuberculosis. We systematically reviewed the literature to qualitatively assess the impact of directly observed therapy (DOT) versus other treatment modalities (non-DOT) on adherence and treatment efficacy in patients with tuberculosis. **METHODS:** English-language literature indexed in the MEDLINE database (accessed via PubMed) from January 1, 2000 through November 5, 2010 was systematically reviewed. Experimental and observational studies with at least 10 patients and one treatment group receiving a DOT were included and reviewed for adherence and efficacy outcomes. **RESULTS:** Thirty-seven tuberculosis studies were included. Twelve studies reported outcomes for both DOTs and non-DOTs. Six comparative studies reported treatment completion; DOT was numerically favored in 5/6 studies, with 3 studies showing significant treatment completion rate benefit in the DOT group. In Daneil et al., the DOT treatment completion benefit (61.6% DOT, 41.5% non-DOT) paralleled significantly less mortality (9.2% DOT, 19.8% non-DOT) and greater treatment success (61.6% DOT, 41.5% non-DOT) ($p<0.001$). In Chee et al., significantly greater treatment completion (89.2% vs. 70.7%) and fewer treatment interruptions (4.0% vs. 12.9%) in the DOT group paralleled fewer deaths (4.2% vs. 13.1%; $p<0.001$). Only one study showed lower treatment completion and more deaths for the DOT. However these results were juxtaposed with a higher cure rate and less treatment default. **CONCLUSIONS:** DOT has shown specific positive clinical impact by reducing mortality, and increasing treatment success and cure rate through increased adherence. This suggests the social pressure of health care professional involvement in observing therapy administration may be a driver of adherence. The association of both treatment adherence and positive clinical outcome with DOT may exist in other disease indications.

PIN12

EPIDEMIOLOGY, OUTCOMES, AND COSTS OF HOSPITALIZATION DUE TO PNEUMONIA, MENINGITIS, AND SEPTICEMIA IN CANADA FROM 2004 TO 2010

Qizilbash N[1], Mcneil S[2], Ye J[3], Gray S[3], Zanotti G[4], Todd M[3], Dartois N[5]
[1]*OXON Epidemiology Limited and Department of Primary Care and Public Health, Imperial College, London, UK,* [2]*Canadian Center for Vaccinology, Dalhousie University, Halifax, NS, Canada,* [3]*Pfizer, Collegeville, PA, USA,* [4]*Pfizer Canada, Kirkland, QC, Canada,* [5]*Pfizer, Paris, France*

OBJECTIVES: The hospital burden and costs of pneumonia, meningitis, and septicemia remain high. A retrospective database analysis was conducted for years 2004–2010 to quantify incidence, case-fatality, length of stay, and cost of hospitalization from all-cause pneumonia, meningitis, and septicemia in Canada (excluding Quebec). **METHODS:** Hospitalizations due to these conditions from 2004–2010 were identified from a national database in Canada using *International Classification of Diseases-10* codes. Statistics Canada provided the population at-risk data for incidence calculations. A costing model, devised using hospitalization data from Ontario, was used to estimate disease-specific costs. Results are reported for all age groups combined. **RESULTS:** From 2004–2010, hospitalized pneumonia incidence (cases per 1,000-persons) declined from 3.61 to 3.47, case-fatality rates declined from 12.3% to 11.6%, and average length of hospitalization increased from 9.99 to 10.54 days. Hospitalized meningitis incidence (cases per 100,000-persons) increased non-monotonically from 4.20 to 4.67, case-fatality rates increased from 5.5% to 6.6%, and average length of hospitalization increased from 12.36 to 12.88 days. Hospitalized septicemia incidence (cases per 100,000-persons) increased from 74.28 to 82.03, case-fatality rates remained at approximately 26%, and average length of hospitalization increased from 14.76 to 16.68 days. From 2004–2009, average total costs (Canadian $) increased from $12,195 to $15,742 for pneumonia, remained at approximately $19,000 for meningitis, and increased from $22,289 to $31,019 for septicemia. Incidence patterns for the three conditions differed by age and gender. **CONCLUSIONS:** The clinical and economic burden due to all-cause hospitalized pneumonia, meningitis, and septicemia across all ages combined have not demonstrated major reductions during the period reviewed and remain high, particularly for pneumonia. However, the pattern varied by age group. Substantial savings in costs and hospital resources may accompany prevention of these conditions by measures aimed at major underlying causes, such as influenza virus and *Streptococcus pneumoniae*.

PIN13

EPIDEMIOLOGY OF STAPHYLOCOCCUS AUREUS INFECTIONS IN CHILDREN: A LITERATURE REVIEW OF THE LAST 10 YEARS

Bricout H[1], Maier W[2], Mouchet J[3]
[1]*Sanofi Pasteur MSD, Lyon, France,* [2]*Registrat-Mapi, London, UK,* [3]*MAPI Research Trust, Lyon, France*

OBJECTIVES: To provide an overview on the epidemiology of *Staphylococcus aureus* (SA) infection in children from North America and Europe. **METHODS:** A literature review was conducted using Medline and based on 4 different search strategies to focus on a children population from birth to 18 years of age and to identify publications from the last 10 years. **RESULTS:** A total of 233 abstracts were retrieved, resulting in the selection of 21 publications. Findings suggest increased incidence rates of hospital-acquired (HA) SA infections worldwide over time. For instance in the USA, the increase in the overall incidence of SA infection among children is significant: from 20.8/1000 admissions in 2002 to 35.8/1000 admissions in 2007, as